REMARKS

Claims 1-14 are pending in the application. Claims 9-14 are withdrawn from consideration. Claims 1-8 stand rejected. Specifically, Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Maier. Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier in view of Cramwinckel et al. Claims 3, 4, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier in view of Cramwinckel et al. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier in view of Malloy et al. Each of these rejections will be addressed hereafter.

Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Maier. First, with regard to applicant's claim 1, Maier teaches a road surface, not an interlayer of a road as taught in the present invention. (See the second paragraph of the Maier patent and also the claims of Maier which specify the surfaces of roads.) Claim 1 specifies that this is an interlayer of a roadway. Both the interlayer of a roadway and the surface layer of a roadway have a rolin in a pavement's composition, but the demands on the two different layers are quite different. One skilled in the art of road building generally would not consider using the teaching found in a patent that focused on producing a surface layer in order to construct an interlayer of a roadway since the wear and strength characteristics of the two layers are so different. Thus the citation of Maier is inappropriate as it is not directed to the same technology or at least not to the same road layer.

Second, Maier teaches away from the present invention. Both Maier and the present invention are addressing the same road building material problem. That

problem is one of balancing stability (hardness) of the road building material with fatigue resistance. It would be desirable to have both a hard, stable material with high fatigue resistance. Generally, however, in order to improve fatigue resistance, the hardness must be sacrificed. The present invention has found a way to have both high fatigue resistance and high stability. The way that Maier addresses this problem is different that the present invention. The present invention does not balance hardness and fatigue resistance as Maier suggests. Instead, the present invention maintains fatigue resistance and increases hardness simultaneously.

On page 1 of the Maier patent, beginning at line 66 and continuing through line 93, Maier first recognizes that paving material employing hard bitumen increases the strength of the road surfaces, but this bitumen binder is difficult to work, difficult to compact , and does not produce the desired results. Maier goes on to teach his invention which overcomes these problems. That teaching is to use hard bitumen (as that term is defined on lines 68-71) in conjunction with an additive comprising of coal products in order to thin down the hard bitumen. Specifically those coal products are, by weight, 40-50% tar oils, 2-5% naphthalene, 2-5% anthracene, 1-2% phenols, 3-8% polyamines and the remainder being pitch or tar. The additive is mixed with the hard bitumen at a ratio between 1:10 and 1:3. Thus, Maier is teaching use of coal based products to soften the hard bitumen so that it produces a desirable road surface. Thus, Maier teaches away from simply use of asphalt and aggregate since he advocates use of coal products in his invention to make the material achieve acceptable results.

Contrast the Maier teaching which uses coal based products with the teaching of the present invention which employs petroleum based asphalt. The present invention has essentially no naphthalene, no tar oils, no anthracene, no polyamines and no pitch or tar. Instead, Applicant has found another way to create a product having high fatigue resistance and high stability. This is done by insuring that the mixture of asphalt binder and aggregate produced by the present method satisfy each of the additional requirements specified in claim 1.

Although it is true that both asphalt and coal are bituminous, Applicant's claim 1 specifies asphalt binders which are petroleum based, not coal based. To make this distinction clearer, Applicant has amended Claim 1 to specify that the asphalt binder is petroleum based. Further, Applicant's asphalt binder is not just any petroleum based asphalt binder, but it must satisfy each of the additional requirements specified in claim 1.

Because Maier uses coal based products as opposed to petroleum based products in his bituminous binder, the product of Maier's invention is chemically and compositionally different from the present invention. Because of the chemical and compositional differences in the two products, they would not be expected to have the same stability characteristics and in fact do not have the same stability characteristics.

Additionally, even if Maier were to teach use of aggregate and a petroleum based asphalt binder, Maier still does not teach the specific mixture that would yield the test results specified for the mixture in claim 1 of the present invention.

For these reasons, Applicant believes that claim 1 should be allowable over Maier.

Regarding the rejection of claim 2 based on Maier, the Examiner states that the binder of Maier teaches asphalt and a polymer (polyamide) and refers Applicant to claim 1 of Maier. Applicant respectfully traverses. First, Maier teaches use of polyamines, not polyamides. Applicant's invention involves polyamides. Also, polyamines are not necessary polymers; they have two or more amino groups attached to an organic compound. Whereas, polyamides are polymers containing monomers joined by peptide bonds in a polymerization process. Although polyamides and polyamines differ in their spelling by only one letter, they are chemically quite different. Applicant has attached information on polyamines and polyamides for the Examiner's reference as found online in From Wikipedia, the free encyclopedia. Therefore, Applicant believes that claim 2 should also be allowable over Maier.

Regarding the rejection of claim 6 based on Maier, claim 6 is dependent upon claim 1 and therefore should also be allowable over Maier.

Claims 1, 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier in view of Cramwinckel et al. and claims 3, 4, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier in view of Cramwinckel et al. The arguments presented above regard the Maier patent are also included by reference against these rejections.

It is unclear from reading the office action what contribution the Examiner feels that Cramwinckel et al. makes in regard to the rejection of claims 1 and 2, but

Cramwinckel et al. is cited by the Examiner against claims 3, 4, 5, and 6 as teaching a bitumen binder that is impermeable to water with a thickness of 2.5 cm, that the bitumen binder can be prepared from any suitable material, and the bitumen binder can be adapted to climate conditions. However, Applicant considers it inappropriate to cite Cramwinckel et al. for any purpose against the present invention because Cramwinckel et al. deals with technology that is unrelated to road building and there is no reason to combine the teachings for the purpose of road building. Cramwinckel et al. teaches a wide strip of mesh reinforced mastic that is wound onto a reel and is unwound onto a surface to be lined, such as for example, a retention pond, an irrigation canal, a weir, or a dam to form a water impervious liner for the purpose of retaining water within the earthen structure. This is not technology that one skilled in the art of road building would consider when searching for a better way to build a roadway as the two technologies are not related.

The mastic strip employed by Cramwinckel et al. is asphaltic material and the Cramwinckel et al. patent even mentions that the asphaltic mastic he uses to line earthen structures can be prepared from any suitable bitumen, for example the type used for road construction. However, this statement contained in the Cramwinckel et al. only teaches the desirability of using road building material for his liner and does not teach or imply the opposite proposition, i.e. that the asphaltic mastic that he employs would be suitable or desirable for use in road building. Nothing in either the Maier or Cramwinckel et al. patents implies that the Cramwinckel et al. technology should or could be used for road building. For this reason, Applicant

respectfully traverses the Examiner's rejection of claims 1, 2 and 6 based on Cramwinckel et al. in combination with Maier.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maier in view of Malloy et al. The arguments presented above regard the Maier patent are also included by reference against this rejection.

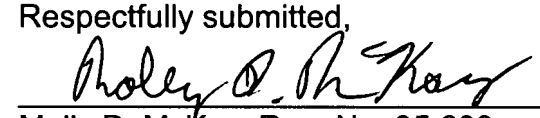
Malloy is cited because it teaches a method of making man made aggregate from two components: fly ash and recycled plastics. The patent states that this man made aggregate can be used for a variety of applications, including asphalt paving (column 1, line 15). As an initial matter, the definition of aggregate, as shown on the attached pages reprinted from THE AGGREGATE HANDBOOK, by the National Stone Association, is referring to "any combination of sand, gravel, and crushed stone in their natural or processed state". Thus, fly ash and recycled plastics are not aggregate under this definition, because they are not naturally occurring or processed sand, gravel or crushed stone. Instead fly ash and recycled plastics are manmade items that are sometimes substituted for aggregate in certain applications. Therefore, Applicant believes it is appropriate for the Examiner to combine these two references. However, because of the deficiencies in the Maier reference, as described above, the combination still does not teach the present invention. Thus, Applicant respectfully traverses this rejection of claims 7 and 8 based on the combination of Maier and Malloy et al.

Additionally, Applicant is canceling claims 9-14 and Applicant is also amending claim 3 to provide antecedent basis for the term "paved surface" in order to place the claims in condition for allowance. It is believed that this

application is now in condition for allowance, and such action is earnestly solicited.

The Commissioner is hereby authorized to charge any additional fees to the deposit account of the undersigned, No. 13-0470.

Respectfully submitted,



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Enclosures: Request for Continued Examination
Check for $1,810.00
Amended claims
3 pages from THE AGGREGATE HANDBOOK
Literature on polyamide and polyamine

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